

REMARKS

Claims 21–40 are pending in this application. By this Amendment, claims 21 and 38 are amended. The amendments to claims 21 and 38 clarify the recited form of the original claims. No new matter is added. Applicants respectfully request reconsideration and prompt allowance in view of at least the following remarks.

The Office Action rejects claims 21–29 and 35–39 under 35 U.S.C. §102(b) as anticipated by PCT Application Publication No. WO 02/077620 as translated by U.S. Patent Application Publication No. 2004/0196455 (Ermantraut). Applicants respectfully traverse the rejection.

Ermantraut fails to disclose "wherein the first and second fluorescence levels are respectively defined by a non-exposed part and by at least one exposed zone of said thin layer, the second fluorescence level being lower than the first fluorescence level," as recited in claim 21. Rather, Ermantraut merely discloses setting the intensity of the fluorescence in the polymer layers by changing the composition of the polymer layers or by changing the thickness of the polymer layers (Ermantraut paragraph [0042]). Ermantraut discloses "the intensities of the fluorescence, which is caused in the regions after corresponding irradiation, are proportional to the layer thickness" (Ermantraut paragraph [0096]). Thus, the fluorescence levels in Ermantraut are clearly dependent on the thickness or composition of the fluorescent layers and not based on non-exposed parts and exposed zones of the thin layer of fluorescence components.

Ermantraut also fails to disclose a degree of cross-linkage including non-cross linkage. The Office Action alleges that the intensity and wavelength of the fluorescence of the polymer layer is settable by changing the degree of cross-linkage, alleging the level of irradiation increases the level of cross-linkage in the polymer layer. The Office Action further alleges that a person of ordinary skill in the art can select a degree of cross-linking

including non-crosslinked. However, during the photolithography process disclosed in Ermantraut, the non-irradiated parts of the polymer layers are removed using a developing agent in which the non-irradiated polymer is soluble, thus leaving the irradiated parts. Even assuming that Ermantraut teaches that the intensity and the wavelength range of the fluorescence of a polymer layer can be predeterminably and reproducibly settable by changing the degree of cross-linkage, because Ermantraut discloses removing the non-irradiated parts with the developing agent, Ermantraut necessarily does not disclose a thin layer of polymer with non-exposed parts because all of the non-exposed (i.e., non-irradiated, non-cross linked) parts of the polymer layer are removed with the developing agent. Thus, the polymer layer disclosed in Ermantraut cannot have cross-linked parts and non-cross linked parts let alone only in some zones of a polymer layer.

Moreover, the Office Action misunderstands the disclosure of Ermantraut in paragraph [0046]. Ermantraut discloses irradiation and tempering during the manufacturing process. This manufacturing process is fully described in paragraphs [0096]–[0101]. As discussed above, the irradiation disclosed in this manufacturing process is related to a photolithography process in which the non-irradiated parts of the polymer layers are removed with negative photosensitive polymers or the irradiated parts of the polymer layers are removed with positive photosensitive polymers (Ermantraut paragraph [0071]). Thus, the irradiation is UV irradiation for polymerizing a polymer layer so that the portion of the layer that is exposed to the UV radiation is not soluble in the developing agent, thereby leaving the polymerized portion for subsequent layering (Ermantraut paragraph [0100]). This irradiation does not disclose the recited "exposure" to control the levels of fluorescence but instead merely discloses a method of forming multiple layers.

Finally, Ermantraut discloses changing the tempering protocols of the process of baking the polymer layers on the substrates as a way of controlling the bleaching behavior

(Ermantraut paragraph [0074]). Ermantraut discloses the bleaching behavior as a reduction in the fluorescence of the polymer layers and discloses using the tempering protocols as a means of controlling the bleaching behavior over a period of time (Ermantraut paragraph [0048]–[0049]). However, Ermantraut fails to disclose the bleaching behavior, and thus "exposure," related to controlling the fluorescence levels "wherein the first and second fluorescence levels are respectively defined by a non-exposed part and by at least one exposed zone of said thin layer, the second fluorescence level being lower than the first fluorescence level," as recited in claim 21.

Therefore, Ermantraut fails to disclose claim 21 and, thus, claim 21 is patentable. As claims 22–29 and 35–39 depend of claim 21, claims 22–29 and 35–39 are patentable, at least in view of the patentability of claim 21, as well as for the additional features they recite. Thus, withdrawal of the rejection is respectfully requested.

The Office Action rejects claims 30–34 and 40 under 35 U.S.C. §103(a) over Ermantraut in view of U.S. Patent No. 6,242,114 (Yamasaki). Applicants respectfully traverse the rejection.

This rejection is premised upon the presumption that Ermantraut discloses all of the features of claim 21. Because, as discussed above, Ermantraut does not disclose all of the features of claim 1, the rejection is improper. Applicants respectfully request withdrawal of the rejection.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 21–40 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

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Attachment:

Petition for Extension of Time

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